WHAT IS CLAIMED IS:

1. A method of proliferating a microorganism capable of degrading a hard-to-degrade organic compound, comprising:

proliferating at least one microorganism capable of degrading a hard-to-degrade organic compound selected from the group consisting of *Janibacter* genus, *Pseudomonas* genus, *Rhodococcus* genus, *Desulfomonile* genus, *Alcaligenes* genus, *Bacillus* genus, *Streptococcus* genus, *Acinetobacter* genus, *Achromobacter* genus, *Paracoccus* genus, *Rhodobacter* genus, *Rhodobacterium* genus, *Methylosinus* genus, *Mycobacterium* genus, *Nitrosomonas* genus, *Corynebacterium* genus, and Methanotrophs, in a culture medium containing both a substance capable of inducing the degradation capability of the microorganism and Fe ions, under inorganic conditions.

2. A method according to claim 1, wherein the microorganism is at least one selected from the group consisting of *Janibacter brevis*, *Pseudomonas putida*, *Pseudomonas cepacia*, *Pseudomonas fluorescens*, *Pseudomonas stuzeri*, *Rhodococcus erythropolis*, *Desulfomonile tiedjei*, *Alcaligenes eutrophus*, and *Pseudomonas mendocina*.

3. A method of degrading a hard-to-degrade organic compound by using a microorganism capable of degrading the hard-to-degrade organic compound,

comprising:

controlling the degradation capability of at least one microorganism capable of degrading the hard-to-degrade organic compound selected from the group consisting of *Janibacter* genus, *Pseudomonas* genus, *Rhodococcus* genus, *Desulfomonile* genus, *Alcaligenes* genus, *Bacillus* genus, *Streptococcus* genus, *Acinetobacter* genus, *Achromobacter* genus, *Paracoccus* genus, *Rhodobacter* genus, *Rhodobacterium* genus, *Methylosinus* genus, *Mycobacterium* genus, *Nitrosomonas* genus, *Corynebacterium* genus, and Methanotrophs, by adjusting the concentration of Fe ions in a culture medium.

4. A method according to claim 3, wherein the microorganism is at least one selected from the group consisting of *Janibacter brevis*, *Pseudomonas putida*, *Pseudomonas cepacia*, *Pseudomonas fluorescens*, *Pseudomonas stuzeri*, *Rhodococcus erythropolis*, *Desulfomonile tiedjei*, *Alcaligenes eutrophus*, and *Pseudomonas mendocina*.

5. A method of degrading a hard-to-degrade organic compound by using a microorganism capable of degrading the hard-to-degrade organic compound, comprising:

proliferating at least one microorganism capable of degrading the hard-to-degrade organic compound selected from the group consisting of *Janibacter* genus,

Pseudomonas genus, *Rhodococcus* genus, *Desulfomonile* genus, *Alcaligenes* genus, *Bacillus* genus, *Streptococcus* genus, *Acinetobacter* genus, *Achromobacter* genus, *Paracoccus* genus, *Rhodobacter* genus, *Rhodobacterium* genus, *Methylosinus* genus, *Mycobacterium* genus, *Nitrosomonas* genus, *Corynebacterium* genus, and Methanotrophs, in a culture medium containing both a substance capable of inducing the degradation capability of the microorganism and Fe ions, under inorganic conditions; and

controlling the degradation capability of the microorganism by adjusting the concentration of Fe ions in the culture medium.

6. A method according to claim 5, wherein the microorganism is at least one selected from the group consisting of *Janibacter brevis*, *Pseudomonas putida*, *Pseudomonas cepacia*, *Pseudomonas fluorescens*, *Pseudomonas stuzeri*, *Rhodococcus erythropolis*, *Desulfomonile tiedjei*, *Alcaligenes eutrophus*, and *Pseudomonas mendocina*.

7. A method according to claim 1, wherein said substance capable of inducing the degradation capability of the microorganism is an aromatic compound.

8. A method according to claim 2, wherein said substance capable of inducing the degradation capability of the microorganism is an aromatic

compound.

9. A method according to claim 5, wherein said substance capable of inducing the degradation capability of the microorganism is an aromatic compound.

10. A method according to claim 6, wherein said substance capable of inducing the degradation capability of the microorganism is an aromatic compound.

11. A method according to claim 7, wherein a concentration of said aromatic compound is 0.1 to 10,000 mg/L and a concentration of said Fe ions is 0.1 to 100 μg/L.

12. A method according to claim 8, wherein a concentration of said aromatic compound is 0.1 to 10,000 mg/L and a concentration of said Fe ions is 0.1 to 100 μg/L.

13. A method according to claim 9, wherein a concentration of said aromatic compound is 0.1 to 10,000 mg/L and a concentration of said Fe ions is 0.1 to 100 μg/L.

14. A method according to claim 10, wherein a concentration of said aromatic compound is 0.1 to 10,000 mg/L and a concentration of said Fe ions is 0.1 to 100 μg/L.

15. A method according to claim 3, wherein a concentration of said Fe ions is controlled based on

an amount of a carbon source remaining in the culture medium and/or an amount of the microorganism capable of degrading the hard-to-degrade organic compound.

16. A method according to claim 4, wherein a concentration of said Fe ions is controlled based on an amount of a carbon source remaining in the culture medium and/or an amount of the microorganism capable of degrading the hard-to-degrade organic compound.

17. A method according to claim 5, wherein a concentration of said Fe ions is controlled based on an amount of a carbon source remaining in the culture medium and/or an amount of the microorganism capable of degrading the hard-to-degrade organic compound.

18. A method according to claim 6, wherein a concentration of said Fe ions is controlled based on an amount of a carbon source remaining in the culture medium and/or an amount of the microorganism capable of degrading the hard-to-degrade organic compound.

19. A method according to claim 9, wherein a concentration of said Fe ions is controlled based on an amount of a carbon source remaining in the culture medium and/or an amount of the microorganism capable of degrading the hard-to-degrade organic compound.

20. A method according to claim 10, wherein a concentration of said Fe ions is controlled based on an amount of a carbon source remaining in the culture medium and/or an amount of the microorganism capable

of degrading the hard-to-degrade organic compound.